

**Remarks****Claim Rejections under 35 USC §112**

Claim 2 stands rejected for indefiniteness because it contains the alleged trademark Kanthal.

Claim 2 as amended is now directed to the specific alloy composition comprising aluminum, chromium and iron commonly known as Kanthal. Claim 2 as amended is believed definite and cures the Examiner's rejection under 35 USC §112.

Applicant respectfully submits that it is not necessary to indicate the trademark status of Kanthal, as none would appear to exist. This is evidenced by all the public documents, including U.S. patents (7,049,258, 7,034,460) that refer to Kanthal without a trademark designation.

Marks which were originally created and used as trademarks, but which have subsequently become entirely synonymous with the common name of the relevant product or service may be considered "fully generic" and unenforceable. Park 'n Fly inc. v. Dollar Park n Fly inc. 469 U.S. 189, 194; Abercrombie & Fitch Co. v. Hunting World Inc., 537f2d 4. 9 (2d Cir. 1976). Generic marks are subject to cancellation at any time. Park 'n Fly 469 U.S. at 194; and lack protection even if incontestable. Id., at 195.

The well known term Kanthal is entirely synonymous with the common name of a high temperature alloy used worldwide. The term Kanthal has no association with a producer of this alloy.

Thus, Kanthal may be considered fully generic. Like "Allen wrench," "aspirin," "cellophane," or "linoleum," Kanthal has become so generic that its former status as a trademark is unrecognized, unenforceable and need not be designated .

### **Claim Rejections under 35 USC §102**

Claim 1 stands rejected as anticipated by Sheets, U.S. Patent No. 4,649,261.

Claim 1 has been canceled.

### **Claim Rejections under 35 USC §103**

Claim 2 stands rejected under 35 USC 103(a) as anticipated by, U.S. Patent No. 4,477,718 to Crain et al. in view of U.S. Patent No. 3,836,751 to Anderson and U.S. Patent No. 5,329,097 to Jones.

Claim 2 has been amended to clarify differences between the present invention and the cited references. The amendments are supported in the specification at page 22, lines 22-30, page 26, lines 25-30 and page 27, lines 25 – 27. No new matter is added.

A major aspect of applicant's invention is to provide process temperatures of 1200° to 1350° C with heating element temperatures of 1400° C in a reflective aluminum process chamber (melting temperature 600° C ) without contamination effects upon the workpiece, the heating elements or the highly reflective aluminum process chamber. The temperature difference, ( $\Delta T$ ) between the workpiece and heating elements can be minimized to within 100°

C or less, thereby greatly extending the serviceability of the heating elements. The foregoing advantages are not possible in the prior art.

In contrast, conventional Halogen lamps and discharge tubes may have element temperatures of 2300° C. or more while process temperature is 1400° (See Gralenski patent application, page 22, lines 5-8.)

Jones et al., U. S. 5,329,097, discloses a Kanthal wire 30 disposed as coils, wrapped around coiled grooves 24 in a ceramic structure 20. Jones et al. disclose only a cylindrical structure with grooves. Nothing protects the heating elements in the grooves.

In contrast, the heating elements in Gralenski are encased in a ceramic sleeve that extends through the process chamber from one plenum to another as recited in claim 2 as amended. An inert gas flowing through the plenum cools the ends of the Kanthal heating elements and prevents spalling of any aluminum oxide within the process chamber.

In addition, elements 31' and 32' of Jones et al. connect with the Kanthal wires and are large diameter materials that could not be slipped through a ceramic sleeve. Jones et al. fail to disclose or even to suggest applicant's heating elements with multiple transitions from Kanthal to Nichrome and from Nichrome to nickel.

The twist lock connectors 31' and 32' also could not achieve the high temperature operation of applicant's furnace with the foregoing graduated integral transitions to Nichrome and nickel. Applicant's graduated transitions also provide the advantage of localizing 80% of the heat within the process chamber (See Gralenski patent app. page 24, lines 21-22.) This is neither suggested by nor possible in the combination of references cited.

Furthermore, Crain et al., U. S. 4,477,718 and Anderson, U. S. 3,836,751, relate to heat lamps. Therefore, it would not be obvious to combine the coiled wires of Jones et al. with the structure for radiant heat lamps. To combine the cited references would appear to be improper in as much as none of the cited references contains a suggestion as to the desirability of forming such a combination. Without such a suggestion, a person with ordinary skill in the art would not be led to form the combination.

In the references cited there is no suggestion as to how to incorporate the structure of Jones et al. into a ceramic sleeve. There is also no suggestion in the references as to applicant's plenum structure for cooling the ends of the heating elements in an inert gas.

**Conclusion**

In view of the foregoing amendments and remarks, claim 2 as amended is believed in condition for allowance. Claim 1 and claims 3-15 are cancelled. Newly presented claims 16-19 are believed to clarify the distinctions of applicant's invention over the references.

Applicant respectfully submits that claim 2 as amended and new claims 16-19 are now in condition for allowance and such a Notice is respectfully solicited.

Respectfully submitted,

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